CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET
SACRAMENTO, CA 95814-5512

November 19, 1999

Mr. John M Torrey
655 3rd Street, P.M.B. 49
Oakland, CA 94607

Dear Mr. Torrey:

Please find enclosed staff's clarification of information required for data adequacy related to biological resources and water resources. As indicated in the enclosure, some of the required studies normally require one-year of sampling to establish a baseline of information. Although less than one year of data was accepted for data adequacy of the Moss Landing Application for Certification (AFC), the quantity and quality of historical data available for the Moss Landing Power Plant Project is not available for the Morro Bay Power Plant Project. This historical data was a critical factor in determining the Moss Landing AFC to be data adequate. Nevertheless, staff may accept less than a full year of studies if the criteria specified in the enclosure are met. The length of the study and the adequacy of the information will need to be acceptable to California Regional Water Quality Control Board (CRWQCB, Central Coast Region), California Department of Fish and Game (CDFG), U.S. Fish and Wildlife Service (USFWS), and Energy Commission staff.

If you have any questions, please call me at (916) 653-1614, or E-mail me at rbuell@energy.state.ca.us.

Sincerely,

Richard K. Buell
Siting Project Manager

Enclosure

cc: Christoper T. Ellison
Mark Seedal
Wayne Hoffman
Greg Fuz, City of Morro Bay
Moira McEnespy, Coastal Commission
Mark Wolfe, CURE
CDFG
USFWS
CRWQCB - Central Coast Region

RKB:rkb
Clarification.doc

# MORRO BAY POWER PLANT PROJECT
# BIOLOGY AND WATER RESOURCES INFORMATION NEEDED FOR DATA ADEQUACY

1. **Entrainment study**. An entrainment study is needed to provide existing environment and project impact information. An entrainment study normally requires one-year of sampling to establish a baseline of information. Staff may accept less than a full year entrainment study for data adequacy, provided the applicant provides: 1) sufficient information for staff and other agencies to conduct analyses required for certification by the time specified by the Energy Commission regulations; 2) a justification that the information provided is representative of data to be obtained during the full year study; and 3) an analysis showing that data collected during the full year study would not substantially change the conclusion drawn from the initial data provided. The length of the study and the adequacy of the information will need to be acceptable to California Regional Water Quality Control Board CRWQCB - Central Coast Region, California Department of Fish and Game (CDFG), U.S. Fish and Wildlife Service (USFWS), and Energy Commission staff. The 316b study plan being developed by Duke Energy, Inc., CRWQCB - Central Coast Region, and CDFG for entrainment should be of adequate design to obtain the information on larval fishes including tidewater goby larvae needed to determine the entrainment losses/effects. Discuss mitigation/compensation for the losses. Discuss compliance and monitoring programs proposed to ensure the effectiveness of mitigation measures incorporated into the project.

   **Siting Regulation reference**: Appendix B (g)(1), B (g)(13)(D), B (g)(13)(F)

2. **Impingement study**. An impingement study is needed to provide existing environment and project impact information. An impingement study normally requires one-year of sampling to establish a baseline of information. Staff may accept less than a full year impingement study for data adequacy, provided the applicant provides: 1) sufficient information for staff and other agencies to conduct analyses required for certification by the time specified by the Energy Commission regulations; 2) a justification that the information provided is representative of data to be obtained during the full year study; and 3) an analysis showing that data collected during the full year study would not substantially change the conclusion drawn from the initial data provided. The length of the study and the adequacy of the information will need to be acceptable to CRWQCB - Central Coast Region, CDFG, USFWS, and Energy Commission staff. The 316b study plan being developed by Duke Energy, Inc., CRWQCB - Central Coast Region, and CDFG should be of adequate design to obtain the information needed to determine impingement losses/effects. Discuss mitigation/compensation for the losses. Discuss the compliance and monitoring programs proposed to ensure the effectiveness of mitigation measures incorporated into the project.

   **Siting Regulation reference**: Appendix B (g)(1), B (g)(13)(D), B (g)(13)(F)

3. **Source water study**. Normally one-year of sampling data is required in order to provide baseline information to be able to compare taxa losses to local and relevant regional populations. Most information needs (other than fish) will be satisfied by the 316b study plan being developed by Duke Energy, Inc., CRWQCB - Central Coast Region, and CDFG. The ongoing fish sampling conducted by CDFG in Morro Bay and near Morro

Bay in Estero Bay, may be sufficient to provide existing environment information for larger than larval fish. The adequacy of that information cannot be determined since it has not been submitted.

**Siting Regulation reference**: Appendix B(g)(1)

4. **The tidewater goby.** The tidewater goby is a federally listed endangered species, and requires additional inventory/population information beyond what the 316b study will provide. A minimum of one year of information for Morro Bay/lagoon is needed on population size, inhabited areas, spawning timing, number of eggs laid, larvae surviving to fry, and how the entrainment losses relate to the population stability. A study plan should be developed and found acceptable to USFWS, CDFG, and Energy Commission staff. Discuss mitigation/compensation for the losses. Discuss the compliance and monitoring programs proposed to ensure the effectiveness of mitigation measures incorporated into the project.

   **Siting Regulation reference**: Appendix B (g)(1), B (g)(13)(D), B (g)(13)(F)

5. **Steelhead.** Steelhead along the Central California Coast are federally listed as threatened. One year of impingement data is needed and should be provided through the proposed 316b study. Additional information needs should be discussed with National Marine Fisheries Service (NMFS), CDFG, and Energy Commission immediately. A minimum of one year of information is needed on the steelhead population passing through Morro Bay and using the creeks that enter Morro Bay, on the smolts leaving the system, and on smolts staying near shore in Estero Bay (thermal effects in Estero Bay). This information is needed in order to make a determination of impacts/effects of the proposed project on steelhead. Discuss mitigation/compensation as applicable. Discuss the compliance and monitoring programs proposed to ensure the effectiveness of mitigation measures incorporated into the project.

   **Siting Regulation reference**: Appendix B (g)(1), B (g)(13)(D), B (g)(13)(F)

6. **Initiate the Consultation(s).** When federally listed species are involved, such as the tidewater goby and steelhead, consultations under Section 7 or 10(a)1(b) of the Federal Endangered Species Act (FESA) need to be initiated immediately with the USFWS (tidewater goby) and NMFS (steelhead). Inform the Energy Commission of the status of the consultation(s).

   **Siting Regulation reference:** Appendix B (h)(3) and B (h)(4)

7. **Discuss Best Technology Available (BTA).** Discuss the criteria used to determine Best Technology Available (BTA), discuss modifications and alternatives to the proposed cooling water intake structure that were considered and how the proposal reduces impingement and entrainment losses of biological resources compared to the alternatives. Provide a discussion of why the alternatives were not adopted.

   **Siting Regulation reference**: Appendix B (g)(13), B (g)(13)(E)(I), B (g)(13)(E)(ii)

8. **Clarify cooling water volume and thermal plume/load**. Provide a description of the existing thermal conditions currently present in Morro Bay and adjacent portions of Estero Bay. This should include surface and subsurface information. This information may be

collected from on-going thermal impact studies, infrared imagery or other sources. Describe tidal variations and other factors that influence water temperature conditions. Describe the existing thermal plume including the extent of the thermal plume, temperature increases above receiving water temperatures and variations due to tidal changes and other factors. The discussion of the existing plume should be tied to recent power plant operation levels. Describe the thermal plume likely to result from operation of the proposed units and the existing units. The extent and temperature increase of the plume above receiving water temperatures should be clearly identified. Also. identify how the plume will behave under different tidal conditions. How the area effected by the thermal plume and the temperature increase above receiving water temperatures was estimated needs to be clearly explained and tied to proposed operating levels of the project. Identify and discuss estimated and potential thermal effects on biological resources resulting from new facility (all units) operation. Discuss mitigation/ compensation for these losses. The compliance and monitoring programs proposed to ensure the effectiveness of mitigation measures incorporated into the project should be discussed.

**Siting Regulation reference**: Appendix B (g)(1), B (g)(13)(D), B (g)(13)(F)

9. **Identify timeline/completion dates for the 316a and 316b studies.** Identify timeline/completion dates for the 316a and 316b studies as agreed to by the CRWQCB - Central Coast Region.

   **Siting Regulation reference**: Appendix B (g)(1), B (h)(4)

10. **Discuss cumulative effects**. Provide a discussion of cumulative effects, including a discussion of direct and indirect effects of the existing and new power plant facilities and other existing or proposed projects/activities that may contribute to cumulative impacts. Examples are: thermal load impacts due the power plants and the wastewater treatment plant north of the power plant site, or cumulative impacts to the tidewater goby population due to entrainment losses and sedimentation and siltation of spawning habitats.

    **Siting Regulation reference**: Appendix B (g)(13)(D)

11. **Provide maps and recent aerial photographs.** Provide maps of the power plant site at 1"= 500' or greater detail with facilities (existing and where new will go) and biological resources mapped. It appears the eelgrass (and other bay/lagoon vegetation) information is from 1974. Please provide current information mapped at 1"= 500' or greater detail. **Comment:** Although aerial photographs are not required for data adequacy, recent aerial photographs of the power plant site with biological resources outlined and identified will be very helpful for the analysis of biological resources.

    **Siting Regulation reference**: Appendix B (g)(i)

12. **Discuss construction activities.** Discuss construction activities more completely (such as road and bridge building, and power plant construction) and then discuss biological resource impacts from construction/operation activities including: noise, night lighting, air emissions, vehicular traffic, new roads, and increased human activity. Discuss these activities in the context of effects on the many sensitive and listed species using the project site and vicinity. Discuss mitigation/compensation measures. Discuss the

compliance and monitoring programs proposed to ensure the effectiveness of mitigation measures incorporated into the project.

**Siting Regulation reference**: Appendix B (g)(1), B (g)(13)(D), B (g)(13)(F)

13. Discuss biofouling/cooling system cleaning techniques and resultant effects on biological resources. Discuss mitigation/compensation measures as needed.

    **Siting Regulations references**: Appendix B (g)(13)(D)